

Claims

1. Device for preparing a beverage by injecting water through a capsule containing a substance to be dissolved and/or to be extracted,
5 comprising at least one water-injection system for introducing water inside the capsule, characterized in that the injection system can be switched in order for a selection to be made between at least two different modes of wetting the substance so
10 as to adapt wetting in accordance with the type of capsule and/or with the nature of the substance contained in the capsule.
- 15 2. Device according to Claim 1, characterized in that the injection system can be actuated to modify the injection configuration in accordance with at least two possible modes, the two modes having between them one or more distinctive features that include the injection
20 direction, the number of injection spikes, and the radial and/or depth position of injection into the capsule.
- 25 3. Device according to Claim 1 or 2, characterized in that the injection system comprises at least one perforation and injection element that can be displaced in the capsule into at least two distinct positions with reference to the perforated surface of the capsule.
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4. Device according to Claim 3, characterized in that the perforation element can be displaced in accordance with two different depths in the capsule.
- 35 5. Device according to Claim 4, characterized in that the perforation element can be displaced into a first, high position in the capsule for wetting the substance contained in the capsule via the top and a second, low position in the capsule for wetting the substance

contained in the capsule via the bottom.

6. Device according to Claim 4, characterized in that the perforation element can be displaced into a first, high position in the capsule in which at least one injection spike is uncovered in the capsule and a second, lower position in the capsule in which a greater number of injection spikes are uncovered in the capsule.

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7. Device according to Claim 3, characterized in that the injection system comprises at least a first perforation and injection element and at least a second perforation and injection element, distinct from the first perforation and injection element, which elements can be displaced relative to one another, each affording a different mode of wetting the substance in the capsule.

8. Device according to Claim 7, characterized in that the first and second elements can be displaced in phase opposition relative to one another into at least a first position in which the first element is in engagement in the capsule and the second element is retracted from the capsule and, conversely, a second position in which the first element is retracted from the capsule and the second element is in engagement in the capsule.

9. Device according to Claim 7 or 8, characterized in that the second injection element is a multi-spike plate for perforating, upon its engagement in the capsule, the surface of the capsule at multiple locations.

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10. Device according to Claim 7, characterized in that the second element is an injection spike located substantially in the centre of the capsule and configured so as to produce multidirectional, divergent

sprinkling in the form of at least one thin layer of water.

11. Device according to Claim 7 or 8 or 9,
5 characterized in that the first element comprises at least one injection point inside the capsule in the form of a jet configured so as to create, in the capsule, a swirling movement that mixes the liquid with the substance.

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12. Device according to any one of Claims 3 to 11,
characterized in that an actuating means is provided for displacing at least said perforation and injection element selectively into the two positions by
15 recognizing the size and/or geometry of the capsule.

13. Device according to Claim 12, characterized in that the actuating means comprises at least one support integral with said perforation and injection element,
20 which support can be displaced elastically relative to a head base, the actuating means comprising at least one detection means for moving the actuating means relative to the head base by complementary engagement of an edge of the capsule.

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14. Device according to Claim 13, characterized in that the injection system comprises a single, central injection spike integral with the actuating means so as to be positioned in a low position in the capsule when
30 the detection means does not encounter a complementary edge of the capsule and a high position in the capsule when the detection means encounters and engages a complementary edge of the capsule.

35 15. Device according to Claim 14, characterized in that the central injection spike is configured so as to produce multidirectional, divergent sprinkling in the form of at least one thin layer of water.

16. Device according to Claim 15, characterized in that the thin layer extends continuously over the periphery of the spike and sprinkles the substance in the capsule substantially circularly.

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17. Device according to Claim 15, characterized in that a number of discontinuous layers of water extend substantially distributed over the periphery of the spike.

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18. Device according to Claim 15, characterized in that the thin layer of water has a thickness of less than or equal to 0.5 mm.

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19. Device according to Claim 14, characterized in that the spike is configured so as to open on account of water pressure against an elastic element, so as to free a passage having a thickness that is determined as a function of the pressure and thereby to create said layer of water.

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20. Device according to Claim 13, characterized in that the injection system comprises a first injection and perforation element in the form of an off-centre injection spike integral with the actuating means and a second injection and perforation element in the form of a multi-spike plate connected to the actuating means by a rocker-type command means and is mounted so that it can be displaced relative to the head base, said multi-spike plate thus being commanded into a position for perforation of the surface of the capsule when the detection means of the actuating means encounters and engages a complementary edge of the capsule and is commanded into a position of retraction relative to the surface of the capsule, consequently allowing the entry of the injection spike into the capsule when the detection means does not encounter the complementary edge of the capsule.

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21. Device according to Claim 20, characterized in that the head base forms a hollow assembly for guiding the multi-spike plate and has sealing rims that close over a collector for receiving the capsule, the
5 injection spike being in communication with said assembly in order to distribute the water in the hollow assembly through or substantially at the level of the multi-spike plate.
- 10 22. Device according to any one of the preceding claims, characterized in that the injection temperature or, alternatively, the injection flow rate in the capsule are switchable.
- 15 23. Method for preparing a beverage by injection of water through a capsule containing a substance to be dissolved and/or to be extracted, in which the liquid is injected through the capsule in accordance with at least two different injection modes, it being possible
20 for each to be selected as a function of the type of capsule and/or the nature of the substance contained in said capsule.
24. Method according to Claim 23, characterized in
25 that the liquid is injected in accordance with at least two modes in which the injection point or points is or are spatially distinct and/or differs or differ in terms of number.
- 30 25. Method according to Claim 24, characterized in that the liquid is injected in accordance with two injection modes that define two distinct injection depths in the capsule.
- 35 26. Method according to Claim 25, characterized in that the liquid is injected in accordance with at least two injection modes in which the speed of introduction of the liquid into the capsule is different.

27. Method according to Claim 25 or 26, characterized in that the liquid is injected in accordance with a first mode so as to create, in said capsule, a swirling movement of the injected liquid, giving rise to mixing
5 with said substance.

28. Method according to Claim 27, characterized in that the liquid is injected in accordance with a second mode so as to form a sprinkling from several entrance
10 points into the capsule at an injection speed that is slower than in the first mode.

29. Method according to Claim 23, characterized in that the appropriate injection mode is selected
15 automatically by recognition of the size and/or the particular form of the capsule.

30. Method according to Claim 29, characterized in that the selection of the injection mode is made in
20 accordance with two positions depending on whether or not the capsules have an engagement edge.